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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BOUTSIKARIS, LEONIDAS

ART UNIT PAPER NUMBER

2872

DATE MAILED: 04/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/655,858

Applicant(s)

SHARP, GARY D.

Examiner

Leo Boutsikaris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 and 37-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 and 37-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/22/06.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 24-26 are objected to because of the following informalities:

Claims 24-25 recite “power spectrum”, which lacks antecedent basis. It is suggested that said claims are made dependent from claim 23.

Claim 26 inherits the deficiency of claim 25 from which it depends.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Sharp (SID Symposium article).

Sharp discloses an optical filter comprising a retarder stack of $N \geq 2$ retarder films, said films being disposed between neutral polarizers, such that the input polarizer, the stack of retarder films and the output polarizer are collectively designed to comprise an FIR film, which generates $N+1$ spatially offset output light waves/pulses in response to a linearly polarized light impulse input, such composite filter filtering at least one band of light depending on the

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orientations of the retarders and the analyzing polarizer relative to the input polarization (see first paragraph of lhs. of p. 1072, also second paragraph in lhs. of p. 1073). It is noted that the phrase in the preamble "for vision" was not given patentable weight as being intended use.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3, 10-11, 16-26, 28-30, 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharp (SID Symposium article) in view of Land (US 2,184,999) and Ogle (US 4,595,262).

Regarding claims 2-3, 17-18, 21-22, Sharp discloses all the limitations of said claims except for specifying that the stack of multiple retarder films between the two polarizers can be used as an optical filter for human vision. Land discloses an optical filter for vision comprising a retarder 14 between a polarizer 12 and analyzer 16, wherein the input polarizer, the output analyzer, and the retarder, at least partially positioned in the field of view substantially filter at least one band of light, e.g., blue light (lines 21-43, col. 2). Furthermore, Ogle discloses a tunable filter used in conjunction with optical goggles, wherein multiple retarder elements (named "wide-field element" in Fig. 1) are disposed between an input polarizer 11 and an output polarizer (analyzer) 18 (line 39, col. 2 to line 37, col. 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the optical filter device of

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Sharp for human vision, e.g., as part of goggles, as taught by Land and Ogle, for increased flexibility in the design of a compact filter that can be used in conjunction with appropriate goggles to protect or selectively enhance human vision. It is noted that a human is a kind of animal.

Regarding claims 16, 19, 28-30, the filter of Ogle is used in conjunction with safety goggles to prevent harmful light rays from lasers. Furthermore, as described above, Sharp teaches that depending on the orientation of the retarders and the analyzing polarizer relative to the input polarization, basic linear systems theory and FIR filter theory can be used to produce a desired output response. This applies to all the following claim limitations that recite specific output spectrum characteristics.

Regarding claim 20, at least two bands of light are substantially attenuated (see Fig. 5 in Land).

Regarding claims 11, 34, Land teaches that the optical filter can be used for vision in areas, such as photography, and illumination (lines 3-8, col. 4). As described above, Ogle discloses that the optical filter of Fig. 1 is used in conjunction with safety goggles, which is a type of visor. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the filter of Sharp in an article of eyewear, as taught by Ogle, since such filter would improve the vision of an observer exposed to an environment with varying lighting conditions. Appropriate design of the polarizer/retarders/analyzer produces an output spectrum to the observer's eye that best fits (and compensates) for the exterior lighting conditions.

Regarding claims 10, 23-26, 32-33, Sharp in view of Land and Ogle disclose all the limitations of said claims except for explicitly teaching that the design of the optical filter is such that the output spectrum is such that color saturation is increased or that color blindness is improved, or that color neutral appearance occurs. It would have been obvious to one of ordinary skill in the art at the time the invention was made to design the polarizer/retarders/analyzer or Sharp to produce output spectra, recited in said claims, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235.

Claims 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharp (SID Symposium article) in view of Thornton (US 4,826,286).

Sharp discloses that depending on the orientation of the retarders and the analyzing polarizer relative to the input polarization, basic linear systems theory and FIR filter theory can be used to produce a desired output response. Thornton teaches a color filter designed for good-seeing (and hence color-neutral-looking view) should exhibit a response as that shown in Fig. 9 (lines 45-50, col. 5). Observation of the spectrum shown in Fig. 9 of Thornton shows that such color filter filters at least one band of inter-primary light (e.g., near 500 nm), light of wavelength smaller or equal than 400 nm, or greater or equal than 700 nm, or of about 500 nm, or of about 580 nm, or at least two inter-primary bands of light (e.g., near 500 nm and near 580 nm), or reduce at least three near zero chromaticity response bands, or produces light having transmittancy at 450 nm, 540 nm and 610 nm that is greater than that at 500 nm or 580 nm. It would have been obvious to one of ordinary skill in the art at the time the invention was made to

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design the optical filter of Sharp so that it produces light having spectrum like the one taught by Thornton, for providing a view at the observer's eye having a spectral content that best matches the observer's response.

Claims 12-15, 27, 31, 37-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharp (SID Symposium article) in view of Land (US 2,184,999) and Ogle (US 4,595,262) and further in view of Thornton (US 4,826,286).

Sharp in view of Land and Ogle discloses an optical filter for human vision, wherein depending on the orientation of the retarders and the analyzing polarizer relative to the input polarization, basic linear systems theory and FIR filter theory can be used to produce a desired output response. However, Sharp does not explicitly teach the output spectra recited in said claims. Thornton teaches a color filter designed for good-seeing (and hence color-neutral-looking view) should exhibit a response as that shown in Fig. 9 (lines 45-50, col. 5). Observation of the spectrum shown in Fig. 9 of Thornton shows that such color filter filters at least one band of inter-primary light (e.g., near 500 nm), light of wavelength smaller or equal than 400 nm, or greater or equal than 700 nm, or of about 500 nm, or of about 580 nm, or at least two inter-primary bands of light (e.g., near 500 nm and near 580 nm), or reduce at least three near zero chromaticity response bands, or produces light having transmittancy at 450 nm, 540 nm and 610 nm that is greater than that at 500 nm or 580 nm. It would have been obvious to one of ordinary skill in the art at the time the invention was made to design the optical filter of Sharp in view of Land and Ogle so that it produces light having spectrum like the one taught by Thornton, for

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providing a view at the observer's eye having a spectral content that best matches the observer's response.

Regarding claim 12, such a filter provides "good-seeing", and hence improves color deficient vision.

Regarding claim 27, the optical filter can be used in conjunction with a lens (lines 22-24, col. 7 in Thornton).

Regarding claim 45, the design of the filter of Sharp in view of Land and Ogle and further in view of Thornton, takes into consideration the inherent spectral profile of the viewer's vision and produces a desired spectral profile for said vision by use of the filter comprising the retarder stack disposed between an input polarizer and output analyzer.

Response to Arguments

Applicant's arguments with respect to claims 1-53 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after


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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Leo Boutsikaris whose telephone number is 571-272-2308.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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April 20, 2006


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